

Application Serial No: 09/987,766
Attorney Docket No.: 51950 (ACT-163)

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): An optical assembly, comprising:
a substrate comprising an upper surface and a cut-out portion;
an optical array mounted on said upper surface; and
an imaging assembly positioned at least partially within said cut-out portion, said imaging assembly comprising at least one imaging device mounted on a first chip; and an integrated optic chip;
wherein said optical array is optically coupled to said imaging assembly and said integrated optic chip.
2. (Original): The optical assembly of claim 1, wherein said optical array is affixed to said imaging assembly and said imaging assembly is affixed to said substrate.
3. (Currently Amended): The optical assembly of claim 2, wherein the integrated optic chip comprises ~~further comprising a waveguide mounted on said substrate, said waveguide being optically coupled with said imaging assembly and~~ comprising at least one waveguide core encased within a cladding.
- 4-5. Canceled.
6. (Original): The optical assembly of claim 2, wherein said optical array comprises an optical bench.
7. (Previously Presented): The optical assembly of claim 2, wherein said optical array comprises an optical fiber array comprising a second chip and at least one optical fiber mounted to said second chip.

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8. (Original): The optical assembly of claim 7, wherein a portion of said optical fiber extends over said cut-out portion.
9. (Original): The optical assembly of claim 7, wherein said second chip includes at least one V-groove, said optical fiber being mounted in said V-groove of said second chip.
10. (Original): The optical assembly of claim 9, wherein said second chip further includes a notch transverse to said V-groove.
11. (Original): The optical assembly of claim 7, wherein said optical fiber array comprises a lid chip.
12. (Original): The optical assembly of claim 1, wherein said first chip includes at least one V-groove, said imaging device being mounted in said V-groove of said first chip.
13. (Original): The optical assembly of claim 1, wherein said imaging device comprises a lens.
14. (Original): The optical assembly of claim 13, wherein said lens comprises a GRIN lens.
15. (Original): The optical assembly of claim 1, wherein said imaging device comprises a graded index fiber.
16. (Original): The optical assembly of claim 1, wherein said imaging device comprises a step-index fiber.
17. (Original): The optical assembly of claim 1, wherein said imaging device comprises a ball lens.

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18. (Original): The optical assembly of claim 1, wherein said cut-out portion is a valley.
19. (Original): The optical assembly of claim 1, wherein said cut-out portion includes a recessed area between at least one pair of ledges.
20. (Original): The optical assembly of claim 19, wherein said substrate further includes at least one notch on a side of said ledges, said notch serving as a wick stop.
21. (Previously Presented): An optical assembly, comprising:
a substrate comprising an upper surface, a cut-out portion and a side surface;
an optical array mounted on said upper surface;
an imaging assembly positioned at least partially within said cut-out portion, said imaging assembly comprising at least one imaging device mounted on a first chip, wherein said optical array is optically coupled to said imaging assembly; and
an integrated optic chip affixed to said side surface of said substrate.
22. (Previously Presented): The optical assembly of claim 21, further comprising a waveguide mounted on said integrated optic chip, said waveguide being optically coupled with said imaging assembly and comprising at least one waveguide core encased within a cladding.
23. (Original): The optical assembly of claim 21, wherein said substrate further comprises at least one notch serving as a wick stop.
24. (Previously Presented): An optical assembly, comprising:
a notch which serves as a wick stop;
a substrate comprising an upper surface;
an optical array mounted on said upper surface;

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adhesive positioned on said upper surface so as to affix said optical array to said upper surface without said adhesive entering said notch;
an integrated optic chip mounted on said upper surface; and
a waveguide mounted on said integrated optic chip, said waveguide comprising at least one waveguide core encased within a cladding, wherein said optical array is optically coupled to said integrated optic chip through said waveguide.

25. (Original): The optical assembly of claim 24, wherein said notch is within said substrate.

26. (Original): The optical assembly of claim 25, wherein said optical array is mounted on said upper surface such that it at least partially covers said notch.

27. (Original): The optical assembly of claim 26, wherein said optical array completely covers said notch.

28. (Original): The optical assembly of claim 24, wherein said optical array comprises an optical fiber array which includes at least one optical fiber mounted on a fiber chip.

29. (Original): The optical assembly of claim 24, wherein said optical array comprises an optical bench.

30. (Previously Presented): An optical assembly, comprising:
a substrate comprising an upper surface;
an optical array mounted on said upper surface, said optical array comprising a notch which serves as a wick stop;
an integrated optic chip mounted on said upper surface; and
a waveguide mounted on said integrated optic chip, said waveguide comprising at least one waveguide core encased within a cladding, wherein said optical array is optically coupled to said integrated optic chip through said waveguide.

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31. (Original): The optical assembly of claim 30, wherein said optical array comprises an optical fiber array which includes at least one optical fiber mounted on a fiber chip, said notch being within said fiber chip.
32. (Original): The optical assembly of claim 30, wherein said integrated optic chip and said optical array are optically coupled at an interface which is vertically above said notch.
33. (Previously Presented): An optical assembly, comprising:
a substrate comprising an upper surface;
an optical array mounted on said upper surface;
an integrated optic chip mounted on said upper surface, said integrated optic chip comprising a notch which serves as a wick stop; and
a waveguide mounted on said integrated optic chip, said waveguide comprising at least one waveguide core encased within a cladding, wherein said optical array is optically coupled to said integrated optic chip through said waveguide.
34. (Original): The optical assembly of claim 33, wherein said integrated optic chip and said optical array are optically coupled at an interface which is vertically above said notch.
35. (Currently Amended): A method for assembling an optical assembly which comprises ~~includes~~ a substrate having an upper surface and a cut-out portion, an optical array, and an imaging assembly, said method comprising:
positioning said optical array on said substrate upper surface;
lowering said imaging assembly at least partially within said cut-out portion;
optically coupling said optical array with said imaging assembly; and
affixing said imaging assembly to said substrate and said optical array to said imaging assembly.

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36. (Original): The method of claim 35, wherein said optical array comprises an optical fiber array with a plurality of optical fibers and wherein said upper surface includes a plurality of V-grooves, said positioning step comprising positioning each said optical fiber within one of said V-grooves.
37. (Original): The method of claim 35, wherein said imaging assembly comprises a plurality of lenses within a chip, said optically coupling step comprising moving said optical fibers such that an end of each said fiber comes into contact with an end of a respective said lens.
38. (Original): The method of claim 35, wherein said affixing step comprises adhering said imaging assembly to said substrate and adhering said optical array to said imaging assembly.
39. (Original): The method of claim 35, wherein said cut-out portion includes a recessed area between a pair of ledges, further comprising the step of creating a notch on at least one side of said ledges.
40. (Previously Presented): The optical assembly of claim 1, wherein said imaging device comprises a GRIN lens, a graded index fiber, a step-index fiber, or a ball lens.
41. (Previously Presented): The optical assembly of claim 1, wherein said optical array comprises a fiber chip or an optical bench.
42. (Previously Presented): The optical assembly of claim 1, wherein said substrate is a monolithic substrate.
43. Canceled.
44. (New): The optical assembly of claim 3, wherein said integrated optic chip comprises a plurality of waveguide cores encased within a common cladding.

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45. (New): The method of claim 35, wherein the optical assembly further comprises an integrated optic chip optically coupled to the imaging assembly.

46. (New): An optical assembly, comprising:
a substrate comprising an upper surface and a cut-out portion;
an optical array mounted on said upper surface;
an imaging assembly positioned at least partially within said cut-out portion, said imaging assembly comprising at least one imaging device mounted on a first chip; and
an integrated optical device;
wherein said optical array is optically coupled to said imaging assembly and said integrated optical device.

47. (New): An optical assembly, comprising:
a substrate comprising an upper surface and a cut-out portion;
an optical array mounted on said upper surface, said optical array comprising a plurality of optical fibers;
an imaging assembly positioned at least partially within said cut-out portion, said imaging assembly comprising at least one imaging device mounted on a first chip; and
a plurality of waveguides that are not optical fibers;
wherein said optical fibers are optically coupled to said imaging assembly and said waveguides.